

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n > 0 {
9          Hanoy(n-1, start, finish, transit)
10         fmt.Println(start, finish)
11         Hanoy(n-1, transit, start, finish)
12     }
13 }
14
15 func main() {
16     Hanoy(8, 1, 2, 3)
17 }

```

01.classic

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n > 0 {
9          if start == 1 && finish == 3{
10             Hanoy(n-1, 1, 2, 3)
11             fmt.Println("1 2")
12             Hanoy(n-1, 3, 2, 1)
13             fmt.Println("2 3")
14             Hanoy(n-1, 1, 2, 3)
15         } else {
16             Hanoy(n-1, start, finish, transit)
17             fmt.Println(start, finish)
18             Hanoy(n-1, transit, start, finish)
19         }
20     }
21 }
22
23 func main() {
24     Hanoy(3, 1, 2, 3)
25 }

```

02.repair1

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n > 0 {
9          if (start == 1 && finish == 3) || (start == 3 && finish == 1) {
10             // variant: if transit == 2
11             Hanoy(n-1, start, transit, finish)
12             fmt.Println(start, transit)
13             Hanoy(n-1, finish, transit, start)
14             fmt.Println(transit, finish)
15             Hanoy(n-1, start, transit, finish)
16         } else {
17             Hanoy(n-1, start, finish, transit)
18             fmt.Println(start, finish)
19             Hanoy(n-1, transit, start, finish)
20         }
21     }
22 }
23
24 func main() {
25     Hanoy(3, 1, 2, 3)
26 }

```

03.repair2

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n > 0 {
9          if (start == 1 && finish == 2)
10             || (start == 2 && finish == 3)
11             || (start == 3 && finish == 1) {
12             Hanoy(n-1, start, finish, transit)
13             fmt.Println(start, finish)
14             Hanoy(n-1, transit, start, finish)
15         } else {
16             Hanoy(n-1, start, transit, finish)
17             fmt.Println(start, transit)
18             Hanoy(n-1, finish, transit, start)
19             fmt.Println(transit, finish)
20             Hanoy(n-1, start, transit, finish)
21         }
22     }
23 }
24
25 func main() {
26     Hanoy(3, 1, 2, 3)
27 }

```

04.cyclic

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n > 0 {
9          Hanoy(n-1, start, finish, transit)
10         fmt.Println(start, finish)
11         Hanoy(n-1, transit, start, finish)
12     }
13 }
14
15 func Hanoy2(n int, start int) {
16     if n > 0 {
17         switch {
18             case start == 1 && n%2 == 0:
19                 Hanoy(n-1, 1, 2, 3)
20                 fmt.Println(1, 2)
21                 Hanoy2(n-1, 3)
22             case start == 1 && n%2 == 1:
23                 Hanoy(n-1, 1, 3, 2)
24                 fmt.Println(1, 3)
25                 Hanoy2(n-1, 2)
26             case start == 2 && n % 2 == 0:
27                 Hanoy2(n-1, 2)
28             case start == 2 && n % 2 == 1:
29                 Hanoy(n-1, 2, 3, 1)
30                 fmt.Println(2, 3)
31                 Hanoy2(n-1, 1)
32             case start == 3 && n % 2 == 0:
33                 Hanoy(n-1, 3, 2, 1)
34                 fmt.Println(3, 2)
35                 Hanoy2(n-1, 1)
36             case start == 3 && n % 2 == 1:
37                 Hanoy2(n-1, 3)
38         }
39     }
40 }
41
42
43 func main() {
44     Hanoy2(4, 1)
45 }

```

05.sorting

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, finish int) {
8      if n == 1 {
9          fmt.Println(start, finish)
10     }
11     if n > 1 {
12         Hanoy(n-1, start, finish)
13         fmt.Println(start, 2)
14         Hanoy(n-1, finish, start)
15         fmt.Println(2, finish)
16         Hanoy(n-1, start, finish)
17     }
18 }
19
20 func main() {
21     Hanoy(2, 1, 3)
22 }

```

06.unfair

```

1  package main
2
3  import (
4      "fmt"
5  )
6
7  func Hanoy(n int, start, transit, finish int) {
8      if n == 1 {
9          fmt.Println(" 1:", start, finish)
10     }
11     if n > 1 {
12         Hanoy(n-1, start, transit, finish)
13         Hanoy(n-2, finish, start, transit)
14         fmt.Println("swap", start, finish)
15         Hanoy(n-2, transit, finish, start)
16         Hanoy(n-1, start, transit, finish)
17     }
18 }
19
20 func main() {
21     Hanoy(4, 1, 2, 3)
22 }

```

07.exchanging